

## **LISTING OF THE CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**1. - 20. (Canceled)**

**21. (Previously Presented)** A receiver circuit for providing a decoded output from a received discrete multi-tone modulated input signal, the input signal being received from a communication channel having noise thereon, the input signal comprising digital data, the circuit comprising:

a first stage having a frequency response for applying a discrete Fourier transform to the input signal; and

a second stage for receiving an output signal from said first stage and per-bin decoding said signal based on a maximum likelihood sequence estimation (MLSE) algorithm so as to recover said digital data;

wherein said maximum likelihood sequence estimation (MLSE) algorithm includes a calculation of state metrics and is modified to include subtraction of estimated noise samples using noise prediction coefficients.

**22. (Original)** The circuit of claim 21, wherein said noise prediction coefficients are the same for all bins.

**23. (Original)** The circuit of claim 21, wherein at least two bins or groups of bins have different respective noise prediction coefficients.

**24. (Original)** The circuit of claim 21, wherein said modified MLSE algorithm performs cancellation of noise received with said input signal from said communication channel.

**25. (Original)** The circuit of claim 24, wherein said noise is additive noise, additionally colored by a windowing procedure.

**26. (Original)** The circuit of claim 25, wherein said windowing procedure is time domain windowing.

**27. (Original)** The circuit of claim 25, wherein said windowing procedure is frequency domain windowing.

**28. - 43. (Canceled)**

**44. (Original)** A method in a receiver circuit for providing a decoded output from a received discrete multi-tone modulated input signal, the input signal being received from a communication channel having noise thereon, the input signal comprising digital data, the method comprising the steps of:

applying a discrete Fourier transform to the input signal; and then  
per-bin decoding said signal based on a maximum likelihood sequence estimation algorithm so as to recover said digital data;

wherein said maximum likelihood sequence estimation (MLSE) algorithm includes a calculation of state metrics and is modified to include subtraction of estimated noise samples using noise prediction coefficients.

**45. (Original)** The method of claim 44, wherein said noise prediction coefficients are the same for all bins.

**46. (Original)** The method of claim 44, wherein at least two bins or groups of bins have different respective noise prediction coefficients.

**47. (Original)** The method of claim 44, further comprising the step of utilizing said modified MLSE algorithm to perform cancellation of noise received with said input signal from said communication channel.

**48. (Original)** The method of claim 47, wherein said noise is additive noise, additionally colored by a windowing procedure.

**49. (Original)** The method of claim 48, wherein said windowing procedure applies time domain windowing.

**50. (Original)** The method of claim 48, wherein said windowing procedure applies frequency domain windowing.